

The major differences between Verizon's and AT&T/WorldCom's cost estimates result from different input values. In violation of forward-looking cost principles, Verizon's recurring cost studies are inextricably linked to its existing embedded network, thus depriving the network of productivity gains and efficiencies that would be available under properly-developed, forward-looking TELRIC costs in a scorched-node environment, and undermining TELRIC's goal of identifying the true cost of network elements. *See, e.g.,* AT&T/WCOM Exh. 12P (AT&T/WCOM Recurring Cost Panel Reb.) at 5. The fact that Verizon's cost models rely on its embedded network as the baseline for developing rates is evident from the testimony of Verizon's witnesses, as well as the recurring cost study itself.

The cornerstone of Verizon's loop cost study is the outside plant engineering survey of its embedded outside plant conducted between 1993 and 1995³⁸ -- a survey that was conducted well before the Telecommunications Act of 1996. *See, e.g.,* Tr. 4352-4353 (Gansert); AT&T/WCOM Exh. 15P (Baranowski Surreb.) at 9; Verizon Exh. 107 (Verizon Panel Dir.) at 121. This engineering survey serves as the basis for a number of assumptions in Verizon's cost models, including the mix of cable support structure -- buried, underground and aerial -- and sharing of structure with other utilities and users. AT&T/WCOM Exh. 11 (Murray Reb.) at 28; Verizon Exh. 122 (Verizon Recurring Cost Panel Surreb.) at 60; Tr. 4025 (Gansert). Verizon's engineering survey -- which elicited nothing more than guesses about Verizon's outside mix -- could not possibly capture accurate information regarding Verizon's embedded outside plant.

³⁸ Notably, AT&T Exh. 112 (AT&T/WorldCom Request 1-34) requested that Verizon produce documents relating to Verizon's engineering survey. However, the only documents that Verizon produced were the survey instructions. Tr. 4028-4038 (Sanford). Verizon never produced feeder routes, customer location information, maps, plats or any other detailed information regarding Verizon's outside plant facilities. *See* AT&T/WCOM Exh. 12P (AT&T/WorldCom Recurring Cost Panel Reb.) at 16. The record thus is devoid of the information needed to test Verizon's claims regarding the purported efficiencies of its existing routes configuration.

Most important, Verizon's reliance on its engineering survey to develop a forward-looking plant mix is misplaced. The engineering characteristics of Verizon's embedded outside plant during the early 1990's would not be the same as those of an entrant that deploys the most efficient network architecture to serve Verizon's current and reasonably foreseeable demand. AT&T/WCOM Exh. 11 (Murray Reb.) at 28-29; AT&T/WCOM Exh. 15P (Baranowski Surreb.) at 5-6. Moreover, the survey does not even accurately describe Verizon's outside plant. For example, the survey asked respondents for the predominant structure of a particular UAA and presumed that such structure applied for that entire UAA. Thus, if all UAAs had 80% buried plant, Verizon's survey results would show 100% buried plant.

Similarly, Verizon's arbitrary assumptions about cable size -- which are grounded in the same flawed engineering survey³⁹ -- are also erroneous. That survey was not designed to determine the forward-looking size of cable and does not even provide reliable estimates of embedded cable size. The survey instructions alone render the study results worthless. The instructions asked each study respondent to "[c]hoose a cable sheath that is typical within the UAA section length." *See* AT&T/WCOM Exh. 12P (AT&T/WorldCom Recurring Cost Panel Reb.) at 13. However, the instructions did not define "typical." Instead, they merely suggest that the "last cable placed for a predominant length within the feeder portion of the UAA section may be a good surrogate" for the typical size in the section, but did not require survey respondents to adopt this assumption. *See* AT&T/WCOM Exh. 112 (Response to AT&T/WorldCom 1-34). *See also* AT&T/WCOM Exh. 12P (AT&T/WorldCom Recurring Cost Panel Reb.) at 13. Accordingly, the survey results could not possibly capture accurate information regarding the cable sizes in Verizon's embedded network. Moreover, Verizon's cable unit prices that are based upon cable sizing algorithms in Verizon's loop cost model and

³⁹ *See* Verizon Ex. 122 (Verizon Cost Panel Surreb.) at 60; Tr. 4025 (Gansert).

Verizon's 1997 through 1999 historical cable installations clearly reflect Verizon's embedded costs – costs which do not comply with the “scorched node approach” mandated by the Commission. *Local Competition Order* ¶ 685; AT&T/WCOM Exh. 15P (Baranowski Surreb.) at 5-6.

Furthermore, the loop lengths used in Verizon's models are based upon Verizon's engineering survey. Verizon has offered no probative evidence that the existing route configuration in its embedded network is the least cost, most efficient route configuration that would be used by an efficient, competitive company in a forward-looking environment. AT&T/WCOM Exh. 12P (AT&T/WorldCom Recurring Cost Panel Reb.) at 15-16.

Verizon's assumptions regarding its forward-looking technology mix are also constrained by the limitations of its embedded network. For example, the percentage split between IDLC and UDLC in Verizon's cost studies is based on Verizon's embedded network. AT&T/WCOM Exh. 11) (Murray Reb.) at 14; AT&T/WCOM Exh. 12P (AT&T/WorldCom Recurring Cost Panel Reb.) at 22. For those lines that are provisioned with IDLC, Verizon assumes that the vast majority will be provisioned with the less-efficient TR-008 interface, instead of the state-of-the art GR-303 interface. AT&T/WCOM Exh. 11 (Murray Reb.) at 24-25; AT&T/WCOM Exh. 12P (AT&T/WorldCom Recurring Cost Panel Reb.) at 19-24. However, Verizon's embedded network, which includes a mix of older technologies that have evolved over the years, cannot possibly mirror the technology mix that an efficient entrant would deploy with a reconstructed local network that uses the most efficient technology available. AT&T/WCOM Exh. 12P (AT&T/WorldCom Recurring Cost Panel Reb.) at 22; AT&T/WCOM Exh. 11 (Murray Reb.) at 16, 18, 25. Clearly, the most efficient, forward-looking digital loop carrier technology

available is the IDLC system that uses a Time Slot Interchange with a GR-303 interface. AT&T/WCOM Exh. 12P (AT&T/WorldCom Recurring Cost Panel Reb.) at 23.⁴⁰

Additionally, Verizon inappropriately relies on its embedded network when modeling the size and type of digital loop carriers electronics. By matching current working line information by existing carrier service area (“CSA”) and distribution area (“DA”) with engineering survey data instead of actual customer locations, Verizon virtually assures that its purported forward-looking network will mirror its embedded facility. Verizon’s approach also guarantees that it cannot take advantage of the efficiencies of DLC technology. AT&T/WCOM Exh. 12P (AT&T/WorldCom Recurring Cost Panel Reb.) at 17-18.

Another critical failure of the Verizon cost models is that the recurring and non-recurring models are based on incompatible assumptions, and as a result prices set in reliance on both studies necessarily overstate costs. As indicated above, the recurring study purportedly models changes to Verizon’s network over the next three years, and then makes the indefensible assumption that all of Virginia’s customers are served by a mix of network equipment that Verizon happens to deploy over that period. Verizon’s NRC model, on the other hand, models the mix of equipment that will actually be deployed in Verizon’s network at the end of the three year period.⁴¹ Thus, for example, if 80% of the DLC Verizon will deploy over the next three

⁴⁰ Indeed, Telcordia decided to model only GR-303 – and not TR-008 – in connection with the SM-2000 Lucent switch module. AT&T/WCOM Exh. 24P (Pitts Supp. Surreb.) at 6.

⁴¹ Verizon’s justification for this irrational combinations of models is that if its NRC model assumed a network comprised of the most efficient available technology, as TELRIC required, there would be no way for Verizon, operating with a mix of old and new technology, to recover its actual expenses. Verizon Ex. 101 (Shelanski Dir.) at 34. Of course, in a competitive world, if Verizon faced a competitor that had lower operating costs because it had a more modern network, Verizon would have to lower its rates to match that competitor, and it would have to do so whether the lower costs of its competitor were the result of lower capital costs or lower operating costs. More to the point, the premise of this argument is that TELRIC is unfair and

years will be IDLC, and if at the end of that period, 40% of the installed base of DLC will be IDLC, Verizon's recurring cost model will model 80% IDLC, while the non-recurring model will model 40% IDLC.

These different modeling assumptions at the very least yield an irrational result. As Verizon's own witness Dr. Shelanski testified, it makes no sense to do what Verizon's models do – consider the value of a product without considering *both* capital and operating expenses together. *See, e.g.,* Tr. 3067-3068 (“I can’t actually tell you what the value of the analog switch is based solely [on the price of the original switch and the price of a switch that currently provided the same functionality] because I would have to know something about the difference in the serving and operating and maintenance costs.”). Because the two models price entirely different networks, together they cannot possibly rationally calculate cost.

Moreover, Verizon's irrational assumptions almost certainly overstate costs. One of the principal reasons any carrier deploys new technology is that it lowers operating and repair costs, the kinds of costs captured in the NRC model. Indeed, carriers might well purchase more expensive equipment because operating with that equipment will lower operating costs. So it is likely that Verizon models a high percentage of higher capital cost equipment in its recurring cost model, because that equipment will allow it to operate more efficiently, while modeling a much lower percentage of that equipment in its NRC model. Competitors thus pay in the recurring model for Verizon's capital costs necessary to obtain lower operating costs, and then do not obtain the benefit of those lower operating expenditures in the non-recurring model. The models leave competitors the worst of both worlds.

that Verizon therefore choose a non-TELRIC model, and that is reason enough to reject Verizon's model.

For all of these reasons, Verizon's cost models ultimately produce grossly overstated recurring rates for UNEs that, if approved by the Commission, would become insurmountable barriers to competitive entry. The inevitable impact of adopting Verizon's proposed rates is to preserve and perpetuate its local monopoly. As a consequence, the Commission should reject Verizon's cost models.

C. Cost of Capital

1. Background.

One of the costs of a network element is the "cost of capital," or return on investment, sufficient to compensate lenders and equity investors for the capital invested in the assets needed by an efficient supplier of the network element. *Local Competition Order* ¶ 700; *Bell Atlantic-Delaware*, 80 F.Supp.2d at 239. The necessary rate of return in turn depends on investors' perceptions of the risks that such a firm would face in its network element business. *See FPC v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944). For UNE pricing, the allowed cost of capital must reflect only the risks of providing the network elements, and not the higher risks of providing retail-related costs, for those costs "are not attributable to the production of network elements that are offered to interconnecting carriers and must not be included in the forward-looking direct cost of an element." *Local Competition Order* at ¶¶ 691, 700; *accord*, *Bell Atlantic-Delaware*, 80 F.Supp.2d at 240.

Because the provision of local telephone service is capital intensive, the cost of capital is an important part of overall costs under TELRIC. If capital costs are overestimated, TELRIC prices will be too high. Excessive capital costs will therefore have the effect of deterring competition, encouraging inefficient construction of bypass facilities by entrants and generating improper subsidies for the ILEC.

The cost of capital issue in this proceeding is largely a reprise of the same issue in the 1996-97 UNE litigation in Virginia and elsewhere in Verizon's service area. In the earlier proceedings, AT&T, relying on a cost of capital analysis sponsored by Mr. John Hirshleifer, Professor Bradford Cornell, or Professor Glenn Hubbard (now Chairman of the President's Council of Economic Advisors), proposed a weighted average cost of capital in the range of 10 percent. Verizon, relying on an analysis by Professor James Vander Weide, proposed a figure of 13.2 percent. 12 Tr. 3421-22 (Vander Weide). The Virginia SCC, generally adopting Mr. Hirshleifer's assumptions and rejecting Professor Vander Weide's, adopted a weighted average cost of capital of 10.12 percent. Order, Case No. PUC970005, at 11 (Va. SCC May 22, 1998) at 6 (10.12 percent).

In resolving the dispute in this way, the Virginia SCC was joined by nearly every other state commission in Verizon's service area where Mr. Hirshleifer, Prof. Cornell or Prof. Hubbard testified for AT&T against Dr. Vander Weide during the 1996-97 period. In no case where these witnesses testified against Dr. Vander Weide did the state commission adopt his cost of capital estimate. 12 Tr. 3422-26 (Vander Weide). In most of the proceedings, the cost of capital adopted by the state commission was on the order of 10 percent, close to what Mr. Hirshleifer, Prof. Cornell and Prof. Hubbard proposed. *See, e.g.*, Order, Case No. 8731, at 29 (Md. PSC Sept. 22, 1997) (10.1 percent); Findings and Recommendations of Hearing Examiners, Delaware PSC Docket No. 96-324, ¶¶ 68 (De. PSC Apr. 7, 1997) (10.28 percent), *affirmed*, Order No. 4542, at ¶ 29 (De. PSC July 8, 1997), *affirmed*, *Bell Atlantic-Delaware, Inc. v. McMahon*, 80 F.Supp.2d 218, 239-41 (D.Del. 2000); Compliance order, Docket No. TO00060356, at 2 (New Jersey BPU, Nov. 30, 2001) (8.82 percent—i.e., *lower* than the value proposed by Mr. Hirshleifer for AT&T).⁴²

⁴² Dr. Vander Weide came closest to success in Massachusetts, where the state commission adopted a cost of capital of 12.16 percent. The FCC has made clear, however, that it regards this

2. Description of the parties' cost of capital studies in this case.

a. AT&T/WorldCom Witness John Hirshleifer

In the present proceeding, AT&T and WorldCom, relying on a cost of capital analysis by Mr. Hirshleifer, have proposed a weighted average cost of capital of 9.54 percent. The change from the 10.01 percent value he sponsored in 1997 is due largely to intervening changes in the current cost of debt and equity; the methodologies of the two studies are essentially the same.

For his analysis of the equity component of capital, Mr. Hirshleifer selected a DCF comparison group of four large, publicly traded telephone holding companies with major interests in local telephone networks. AT&T-WCOM Exh. 5 (Hirshleifer Dir.) at 7-8 & Attachment JH-2. Currently, there are no "pure-play" companies operating exclusively as a

value as questionable, and the Massachusetts DPU has reopened the record for further proceedings on this and other issues. *See* FCC CC Docket No. 01-9, *In the Matter of Application of Verizon New England, Inc., et al., for Authorization to Provide In-Region InterLATA Services in Massachusetts*, Memorandum Opinion and Order rel. April 16, 2001 ¶ 38 (expressing concern that Massachusetts DPU used a "relatively high" cost of capital of 12.16 percent, a value "substantially higher than the cost of capital employed by any of the other states in Verizon's region"); *id.* at ¶ 251 (citing cost of capital rate as one of the "potential flaws" in Verizon's cost study that, "if repeated without justification, could result in UNE rates that warrant enforcement action" by the FCC).

Dr. Vander Weide's next most successful effort was in Pennsylvania, where the state PUC adopted a weighted average cost of capital of 11.9 percent, AT&T and MCI challenged this value as excessive and contrary to TELRIC principles, and the reviewing court remanded this aspect of the PUC's decisions for reconsideration in light of the August 8, 1996 Order. *See MCI Telecommunications Corp. v. Bell Atlantic-Pennsylvania, Inc.*, Civil No. 1:CV-97-1857 (M.D. Pa., June 30, 2000), Memorandum and Order at pp. 10-13. The PUC eventually agreed, finding in 1999 that the 1996 Bell Atlantic/NYNEX merger proxy statement showed that "an 11.9 percent cost of capital is no longer appropriate," and that the 9.83 percent value sponsored by AT&T/MCI witness Cornell "is a more reasonable assumption at this time." *Nextlink Pennsylvania, Inc.*, 196 P.U.R.4th 172, 210 (1999) ("*Global Order*").

wholesale provider of unbundled network elements; indeed, there are few if any publicly traded firms that provide only local telephone service. The most comparable companies are the large regional telephone holding companies (“RHC”s), which have been required to provide unbundled network elements at wholesale. Because RHCs currently engage in more risky businesses of selling retail phone service, cellular service, paging, information services, long-distance, cable and the like, using these companies as comparables leads to cost of capital estimates that are necessarily conservative (*i.e.*, too high). AT&T-WCOM Exh. 5 (Hirshleifer Dir.) at 4, 7-8, 37, 40-43; AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 33-35.

To estimate the cost of equity of the companies in this comparison group, Mr. Hirshleifer used two alternative methodologies: (a) a three-stage discounted cash flow (“DCF”) methodology based on the future dividends for the comparable group of companies identified in step one; and (b) the capital asset pricing model (“CAPM”), in which he calculated a “risk premium” for the comparable companies (based on their price volatility in relation to other stocks), which he then added to a risk free rate of return. AT&T-WCOM Exh. 5 (Hirshleifer Dir.) at 10-34. The result was a cost of equity in the range of 10.6 percent. *Id.* at 19-34.

For the cost of debt, Mr. Hirshleifer used reported data on the forward-looking debt costs incurred by Bell Atlantic as of June 30, 2000. From these data he obtained a debt cost of 7.86 percent. *Id.* at 8-10.

Finally, Mr. Hirshleifer determined a weighted average of the debt and equity costs by determining the average book capital structure (debt-equity) ratio of the companies in the group, and by determining the average market-weighted capital structure. Using the midpoint of the results two capital structures yielded a weighted average cost of capital of 9.54 percent, with an implicit debt/equity ratio of 34.5/65.5 percent. *Id.* at 34-39; AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 31-34; AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 53-60.

b. Verizon Witness James Vander Weide

Verizon, for its part, has chosen to stand pat with the same inflated assumptions previously proposed by Dr. Vander Weide and rejected by most state commissions. With his current data, he derives a cost of capital of 12.95 percent. Verizon Exh. 112 (Vander Weide Reb.) at p. 4; 12 Tr. 34212-22 (Vander Weide); AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 10.

Dr. Vander Weide again relies for his cost of equity estimate on a single-stage DCF model, which assumes that the above-average growth rates projected by analysts over the next 3-5 years for the companies in his comparison group will continue forever. AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 10-17. And he continues to use a comparison group for his DCF analysis consisting of approximately 110 of the 400 nonfinancial companies in the S&P 500 Industrial list, the vast majority of which are engaged in lines of business unrelated to the wholesale business of supplying unbundled network elements. Verizon Exh. 112 (Vander Weide Reb.) at 38-39; AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 17-18; AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 35-36. From these procedures, Dr. Vander Weide obtains an equity cost of 14.75 percent. AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 10.

In estimating the cost of debt, Dr. Vander Weide has used a cost of debt reported by Moody's for long term A-rated bonds, or 7.55 percent. Verizon Exh. 104 (Vander Weide Dir.) at 45-46.

Finally, Dr. Vander Weide uses debt-equity ratios based on the market weighted capital structures for the group of S&P Industrial companies; a group of telephone holding companies that own local exchange carriers; and a group of telephone holding companies that own interexchange carriers. He made no adjustment to the resulting capital structures to reflect the lower risk of the business of supplying unbundled network elements at wholesale, which warrants a more leveraged (debt-weighted) capital structure than the businesses he studied. AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 10.

Dr. Vander Weide's analysis produces a weighted average cost of capital of 12.95 percent, based on a 7.55 percent cost of debt, a 14.75 percent cost of equity, and a debt/equity ratio of 25/75. *Id.*

As explained in the rest of this section, Dr. Vander Weide's latest testimony provides no legitimate reason for rejecting the methodology and results offered by Mr. Hirshleifer, or reconsidering the near-unanimous rejection of Dr. Vander Weide's inflated assumptions by the state commissions in Verizon's service area. The present record confirms anew that a cost of capital in the range of 9.54 percent is reasonable, and the 12.95 percent value proposed by Dr. Vander Weide is grossly excessive, and thus would erect a barrier to competition through the purchase of UNEs, encourage inefficient facilities-based entry, and generate monopoly rents for Verizon.

3. Mr. Hirshleifer's Three-stage DCF Equity Model Is More Realistic Than Dr. Vander Weide's One-stage DCF Equity Model.

The single most significant dispute between Mr. Hirshleifer and Dr. Vander Weide involves the number of stages appropriate for a DCF equity model. This dispute alone accounts for about two percentage points, or more than half of the total difference between the 9.54 percent weighted average cost of capital recommended by Mr. Hirshleifer and the 12.95 percent value recommended by Mr. Hirshleifer. AT&T/WCOM Exh. 17 (Hirshleifer Surreb.) at 11; 12 Tr. 3431, lines 1-9 (Vander Weide).

Mr. Hirshleifer based his DCF cost of equity analysis on a three-stage DCF model, which recognizes that the above-average growth rates projected by I/B/E/S or other analysts for the next 3-5 years will likely regress over time to the long run average growth rate of the entire economy.⁴³ Mr. Hirshleifer reasonably assumed that, from year 6 to year 20 (from

⁴³ See AT&T-WCOM Exh. 5 (Hirshleifer Dir.) at 12-15; AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 12-16; AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 2-17.

2006 to 2020), the growth rate of telecommunications holding companies will slowly converge to the growth rate of the S&P 500. After year 20 (from 2021 thereafter), Mr. Hirshleifer assumed that growth rates for THCs will equal the growth rate of the rest of the economy. This analysis is called a “three-stage DCF analysis.” AT&T-WCOM Exh. 5 (Hirshleifer Dir.) at 15-17.

Dr. Vander Weide, on the other hand, used a one-stage DCF model—implicitly assuming that the above-average 3-5 year growth rates projected by I/B/E/S for the companies in his DCF comparison group will continue forever. 12 Tr. 3427-29 (Vander Weide). It should be obvious to investors that this assumption is an impossibility. The I/B/E/S growth projections for the companies analyzed by Dr. Vander Weide were in the range of 10-11 percent or more per year—nearly *double* the long term rate of corporate growth.⁴⁴ Only in Lake Wobegon can the average performance of a large group of companies exceed the long-term historical average for more than a short period. Sooner or later, the rate of earnings growth for the average firm can be expected to regress to the mean as the firm reaches the limits of its potential markets, or succumbs to new competition, technological innovation, management errors, or other constraints on earnings growth. Dr. Vander Weide’s approach systematically overstates the future projected earnings of these companies, and thus overstates the discount rate—*i.e.*, cost of equity capital—needed to reduce the present value of those future earnings to the current market price of the company’s stock. AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at pp. 12-17.⁴⁵

⁴⁴ Verizon Exh. 112 (Vander Weide Dir.) at Attachment 7.

⁴⁵ The fallacy of Dr. Vander Weide’s growth assumptions is easily demonstrated. If *any one* of the companies in Dr. Vander Weide’s comparison group sustained growth in excess of the market-wide rate of growth into the long run, that one company would eventually grow to swallow up the entire economy. AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 13.

Unsurprisingly, the single-stage DCF model has been overwhelmingly rejected by scholars and practitioners in the field of corporate finance. AT&T-WCOM Exh. 5 (Hirshleifer Dir.) at 12-15; AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at pp. 16-17. Indeed, even the investment banks and securities analysts retained by Verizon in recent years have used multi-stage DCF models rather than one-stage models for their analysis. AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 6-8. Significantly, neither Dr. Vander Weide nor Verizon was able to identify a single reputable economist who supports a one-stage DCF for companies with above-average short-run growth rates. AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 2; Response of Verizon to Staff record request 12 (filed Oct. 10, 2001); 12 Tr. 3440 (Vander Weide) (“I didn’t look at the literature.”); *id.* at 3438 (“No, I didn’t rely on the finance literature.”).

In defense of a one-stage DCF, Dr. Vander Weide advanced three main arguments: (1) some companies have historically managed to sustain above-average growth rates for a long time; (2) the number of stages in the DCF model has only a *de minimis* effect on the cost of capital, because the present value of projected earnings in distant years is very small; and (3) whether short-term growth projections are really sustainable over the long run is irrelevant, because investors *believe* that short-term growth projections are sustainable when making investment decisions. None of these defenses withstands scrutiny. We respond to each one in turn.⁴⁶

⁴⁶ Dr. Vander Weide also criticizes as arbitrary Mr. Hirshleifer’s choice of his three-stage model rather than other multi-stage DCF models that have discussed in the economic literature. Mr. Hirshleifer has explained, however, why the three-stage model is particularly well suited here. In any event, other commonly-used multi-stage models would produce an even lower cost of capital. AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 13-17.

a. Above-Average Short-Run Earnings Growth Is Unsustainable In The Long Run.

Dr. Vander Weide's prefiled testimony seizes upon examples of a few companies, like Intel and WalMart, that have managed to sustain above-average growth rates for many years, as evidence that sustained above-average growth is possible. This argument confuses hindsight with foresight, and isolated exceptions with the general rule. Dr. Vander Weide's one-stage DCF model assumes not just that *some* of the companies in his comparison group will beat the pack, but that *all* of the companies in his group, on average, will do so.⁴⁷ No large and diverse group of companies like the S&P Industrials has ever managed to beat the average for a sustained period of years; Dr. Vander Weide has been unable to identify a single exception.⁴⁸ Indeed, even individual high-fliers sooner or later regress to the mean, as the recent experience of Intel and other tech stocks illustrates.⁴⁹

Moreover, investors do not enjoy Dr. Vander Weide's luxury of 20-20 hindsight: investors must commit and withdraw funds based projections and expectations about the future, not on past history. Because the actual long-run performance of any company can be known for certain only in hindsight, the returns that investors can realistically expect necessarily reflect the likelihood that corporate growth will regress to the mean, not the tulip bubble-like assumptions underlying Dr. Vander Weide's one-stage model.⁵⁰

On cross-examination, Dr. Vander Weide abandoned his claim that above-average rates of earnings growth would actually be sustainable over the long run for his DCF comparison group:

⁴⁷ See, e.g., AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at pp. 13-15.

⁴⁸ AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 4-5.

⁴⁹ AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 3-5; Burton G. Malkiel, *A Random Walk Down Wall Street* 97-99 (1999).

⁵⁰ See AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 2-6.

MR. LEVY: . . . You're not asking the Commission—you're not offering as a reason for adoption of the one-stage DCF the proposition that, in fact, the companies in your DCF comparison group are likely to grow at an above-average rate for a long period of time?

DR. VANDER WEIDE: That's not my support. My support is I provided evidence that investors *expect* them to grow at above-average rates for a long period of time.

* * *

MR. LEVY: So, whenever in your pre-filed testimony the reader might rightly or wrongly gain the impression that you're testifying about what will actually happen about long-run growth of companies, that should, in fact, be read with a gloss that you're only talking about what investors *expect*?

DR. VANDER WEIDE: Certainly should because my entire testimony, in regards to the cost of capital, has to do with investor expectations.

Tr. 3448, 3543 (emphasis added).

b. The Choice Between The One-Stage And Three-Stage DCF Models Has A Significant Effect On The Estimated Cost of Equity.

Dr. Vander Weide asserts that the assumption of perpetual growth at above-average rates, even if counterfactual, has only a minimal effect on the cost of capital because the present value of earnings more than 40 or 50 years in the future is small.⁵¹ This claim is also without merit.

⁵¹ See Verizon Exh. 112 (Vander Weide Reb.) at p. 40. This claim is a retreat from Dr. Vander Weide's position five years ago. In Verizon's 1997 UNE proceeding in Virginia, he argued that the impact on present value of dividend growth rate assumptions became *de minimis* beyond 20 years, not just 40 years. See AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 9-10.

First, Dr. Vander Weide has provided no evidence that the average company in his comparison group will sustain its supra-normal short-term projected growth rate for even 10 or 20 years, let alone 40.⁵²

Second, even if the average firm in the S&P 400 were likely to sustain 40 years of above-average growth, the present value of the difference between 40 years of above-average growth and Dr. Vander Weide's assumption of *perpetual* above-average growth is still large. Dr. Vander Weide's assertion that the present value of projected earnings in the distant future is *de minimis* ignores the fact that the passage of time compounds the gross value of future earnings as well as the discount factor used to reduce them to a present value. AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 15-17.

Mr. Hirshleifer has quantified the net effect. Compared with a growth model that assumes 40 years of sustained above-average growth before reversion to the long-term average growth rate (*i.e.*, a two-stage growth model), the one-stage DCF overstates the cost of equity by at least 150 basis points.⁵³ Compared with the more conservative assumption that growth would revert to the long-term trend after 20 years, the one-stage, perpetual growth model overstates the cost of equity by 230 basis points.⁵⁴

Compared with the three-stage model, the overstatement produced by the one-stage model is even greater. Dr. Vander Weide has acknowledged that the choice between his one-stage DCF and the three-stage DCF model sponsored by Mr. Hirshleifer accounts for approximately 200 basis points (*i.e.*, two percentage points) of the difference between the cost of equity estimates of the two witnesses. AT&T/WCOM Exh. 17 (Hirshleifer Surreb.) at 11.

⁵² See AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 6-7 (citing industry analyst reports whose growth assumptions through 2008 are very conservative).

⁵³ *Id.* at 9 and Attachment JH-1 thereto.

⁵⁴ *Id.* at 9.

c. Dr. Vander Weide's Speculation About Investor Psychology Is Unsupported.

Dr. Vander Weide asserts that the long run sustainability of the above-average rates of earnings growth projected for his DCF comparison group over the next three to five years is irrelevant because the average investor *believes* that short-term growth trends projected by I/B/E/S and Value Line are in fact sustainable in the long run. VZ Exh. 118 (Vander Weide Surreb.) at 39-40. Dr. Vander Weide's speculation about investor psychology is as unsupported as his analysis of actual corporate growth rates.

Both the I/B/E/S and Value Line growth forecasts are explicitly limited to periods of five years and 3-5 years, respectively.⁵⁵ Dr. Vander Weide's theory thus necessarily assumes that the investors who use the data—including investment professionals who prepare stock purchase recommendations or manage mutual funds and other pools of institutional investment capital—overlook or deliberately ignore these disclaimers. Dr. Vander Weide has offered no credible support for this assumption.⁵⁶

In his rebuttal and surrebuttal testimony, Dr. Vander Weide asserted that such support appears in data published by Value Line “that can be used to estimate a company's long-run sustainable growth from internal sources.” VZ Exh. 112 (Vander Weide rebuttal) at 46 & Rebuttal Schedule 4; VZ Exh. 118 (Vander Weide Surreb.) at 40. These data, however, are no

⁵⁵ See AT&T-WCOM Exh. 17 (Hirshleifer Reb.) at 11-12; 12 Tr. 3457-62 (Vander Weide) (discussing caveats published by Value Line on the period covered by its financial projections); Exh. AT&T-108 at 920-21 (Value Line caveats); *id.* at 746 (right-hand column) (showing that projections extend only out to the years 2004-06).

⁵⁶ The assumption is, of course, fundamentally inconsistent with the DCF and CAPM models, both of which assume rational behavior by investors. 12 Tr. 3685 (Hirshleifer); *compare* VZ Exh. 104 (Vander Weide) at 11-12, 17-18 (defining cost of capital in terms of investors' rational expectations); 12 Tr. 3668, lines 9-12 (Vander Weide) (perpetual growth assumption implies that investors are irrational).

longer-run than any of the other projections published by Value Line or I/B/E/S: like the other data, they purport to apply only for the next 3-5 years. AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 11-12.

During cross-examination, Dr. Vander Weide volunteered a journal article he co-authored in 1988, purporting to show that changes in stock prices in the early 1980s correlated closely with changes in short-term earnings projections by analysts, rather than long-term average growth rates. James H. Vander Weide and Willard T. Carleton, "Investor Growth Expectations: Analysts vs. History," *Journal of Portfolio Management* (Spring 1988) at 78 (AT&T Exh. 109); 12 Tr. 3468-69, 3490:4-11 (Oct. 24, 2001). The article, however, does not support the conclusion that Dr. Vander Weide would draw from it today, nearly two decades after the vintage of the data studied in the article.

The corporations reported in the article were all regulated utilities—*i.e.*, companies that generally have *not* generally experienced above-average short-term growth rates. 12 Tr. 3472-73 (Vander Weide). The article does not reveal how many of the companies in the study group were in fact projected to achieve above-average earnings growth in the short run, and Dr. Vander Weide was unable to state whether *any* of the companies were projected to achieve above-average earnings growth. 12 Tr. 3487-89, 3575-76, 3486. Moreover, the early 1980s were a period of double-digit interest rates, a response by investors to the double-digit inflation of the late 1970s.⁵⁷ Adjusted for inflation, the projected short-run growth in earnings of the companies he studied during the study period *did not exceed the long run growth in corporate earnings*. Such data obviously reveal nothing about investor expectations during periods when short-term growth projections temporarily exceed the long run trends. Finally, the

⁵⁷ See Statistical Abstract of the United States (2000), at 487, 521 (Table Nos. 768 and 822); Statistical Abstract of the United States (1997), at 497 (Table No. 752); 12 Tr. 3485-86 (confirming that data studied were from 1981-83).

study examined only the predictive power of the 1-stage DCF model, and made no attempt to compare the *relative* predictive power of the 1-stage and 3-stage models. 12 Tr. 3533:20-3534:8.

During his cross-examination, Dr. Vander Weide also volunteered a citation to one more recent article: 12 Tr. 3492 (referring to David A. Gordon, Myron J. Gordon, and Lawrence I. Gould, “Choice Among Methods of Estimating Share Yield,” *The Journal of Portfolio Management* (Spring 1989) at 50-55). The article contradicts, rather than supports, Dr. Vander Weide’s claims. Gordon *et al.* found that growth rates predicted by analysts were useful for determining the DCF yield only on stable utility company stocks, and had little or no predictive power for industrial company stocks. These results are more consistent with the findings of other leading authorities cited in Mr. Hirshleifer’s testimony: for companies with stable growth at rates comparable to or less than the growth rate of the economy, *such as highly-regulated utility companies in the Gordon et al. study period of 1984-1986*, the use of a single-stage model would not be unreasonable. Industrial companies, however, which have market expectations of a wide array of non-constant growth rates over time, do not lend themselves well to the long-term assumption of I/B/E/S growth rates.⁵⁸

The regression analyses that Dr. Vander Weide has performed himself as “tests of reasonableness” in the later stages of this case border on the frivolous. On pages 71-75 of his rebuttal testimony, Dr. Vander Weide “proves” through a series of regression analyses that the cost of capital values generated by the three-stage DCF model have a negative correlation with several purported measures of risk. The assumptions that Dr. Vander Weide made to reach these results would embarrass a first-year graduate student. See AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 75-83 (discussing methodological errors).

⁵⁸ Objections Of AT&T And WorldCom To Verizon Response To Staff Record Request For Literature Comparing The Accuracy Of One-Stage Vs. Multi-Stage DCF Models (filed Oct. 18, 2001) at 10-11.

The further regressions submitted by Verizon in its December 10 “response” to Staff’s record request for citations to literature concerning the relative merits of the one-stage and three-stage DCF models are no more probative. According to Verizon, the regressions show that the growth rates used in the one-stage DCF model correlates better with the price/earnings ratios of individual companies in the DCF sample than do the growth rates used in Mr. Hirshleifer’s three-stage DCF. This claim is absurd. The growth assumptions tested in the regressions are single-stage, not multistage; the regressions use a linear function form to test a nonlinear economic relationship; the equations use inappropriate betas as risk proxies for the true cost of equity; and other, equally plausible regressions of the same data produce results opposite to those claimed by Dr. Vander Weide.⁵⁹

Dr. Vander Weide’s failure to cite any credible research that supports the use of a one-stage DCF model for companies with above-average short-term growth rates is unsurprising. The overwhelming consensus of scholars and practitioners is that the multi-stage DCF model reflects actual investor expectations far better.⁶⁰

4. The Relevant Risk Of Verizon’s UNE Business Is Low.

Another major area of dispute among the parties involves the level of risk to be assumed in estimating the cost of capital. The assumed level of risk affects the estimated cost of capital in several ways: (1) the choice of companies for the DCF equity comparison group; (2)

⁵⁹ *Id.* at 4-17.

⁶⁰ See AT&T-WCOM Exh. 5 (Hirshleifer Dir.) at 12-17 (discussing scholarly literature). Other literature not cited therein include Ibbotson Associates, *Stock, Bonds, Bills and Inflation, 2001 Yearbook*, at 49-50; Shannon P. Pratt, *Cost of Capital: Estimation and Applications* 116-117 (1998); and Bradford Cornell, “Alternate Approaches Available for DCF Method,” *Natural Gas* 13-17 (November 1994).

the cost of debt; (3) the optimal debt/equity ratio; and (4) the appropriate risk premium for a CAPM equity analysis.

In the 1996-97 UNE rate litigation, the Virginia SCC, like most other state commissions, found that the relevant risk is low because Verizon, for the foreseeable future, is unlikely to face significant competition in supplying UNEs at wholesale. *Local Competition Order* ¶ 702; *Bell Atlantic-Delaware, Inc. v. McMahon*, 80 F.Supp.2d 218, 240-241 (D.Del. 2000). In the present case, Verizon seeks to overcome these findings on two alternative grounds. First, Verizon asserts that consistency with the TELRIC standard requires the Commission to presume, as a matter of law, that the business of supplying UNEs at wholesale has a high degree of competitive risk. Second, Verizon asserts that the business of supplying UNEs is likely to be risky in fact. Neither claim is well founded. We respond to each in turn.

a. The TELRIC Standard Does Not Require The Commission To Adopt The Legal Fiction That The Business Of Supplying Unes Will Be Highly Risky.

Dr. Vander Weide and other Verizon witnesses insist that, regardless of whether Verizon *in fact* is likely to face effective competition for the business of supplying UNEs at wholesale, the *Local Competition Order* requires the Commission to *assume* that such competition will occur. Verizon reasons that, because the TELRIC methodology seeks to replicate the *costs* of a firm in an effectively competitive market, one must also assume that the business of supplying UNEs faces a very high degree of competitive risk.⁶¹ Verizon's construction of the *Order* is at odds with its language, has been rejected by the courts and disavowed by Verizon itself, cannot be implemented with available data, and—if it could be

⁶¹ Verizon Exh. 104 (Vander Weide Dir.) at 8-10, 26-34; Verizon Exh. 112 (Vander Weide Reb.) at 3-4; Verizon Exh. 118 (Vander Weide Surreb.) at 2-3, 19-24; 12 Tr. 3434-35, 3474-75, 3477-79, 3547 (Vander Weide); *accord*, Verizon Exh. 101 (Shelanski Dir.) at 30-31; VERIZON Exh. 108 (Tardiff Reb.) at 55-57.

implemented—would require the assumption of a lower, not higher, degree of competitive risk than Verizon now faces. The TELRIC standard does not require the Commission to adopt the legal fiction Verizon will face more competition than is plausible for the foreseeable future.

First, Verizon’s interpretation of the *Local Competition Order* ignores both the language and underlying structure of the *Order* itself. Paragraph 702 of the *Order* makes clear that the incumbent LECs bear the burden of “demonstrating with specificity” the competitive risks they will actually face:

Based on the current record, we conclude that the currently authorized rate of return at the federal or state level is a reasonable starting point for TELRIC calculations, and *incumbent LECs bear the burden of demonstrating with specificity that the business risks that they face in providing unbundled network elements and interconnection services would justify a different risk-adjusted cost of capital or depreciation rate. These elements generally are bottleneck, monopoly services that do not now face significant competition.* We recognize that incumbent LECs are likely to face increased risks given the overall increases in competition in this industry, which generally *might* warrant an increased cost of capital, *but note that, earlier this year, we instituted a preliminary inquiry as to whether the currently authorized federal 11.25 percent rate of return is too high given the current marketplace cost of equity and debt.* On the basis of the current record, we decline to engage in a time-consuming examination to determine a new rate of return, which may well require a detailed proceeding. *States may adjust the cost of capital if a party demonstrates to a state commission that either a higher or lower level of cost of capital is warranted, without that commission conducting a ‘rate-of-return or other rate based proceeding.’ We note that the risk-adjusted cost of capital need not be uniform for all elements. We intend to re-examine the issue of the appropriate risk-adjusted cost of capital on an ongoing basis, particularly in light of the state commissions’ experiences in addressing this issue in specific situations.*

Id. ¶ 702 (emphasis added). The factual inquiry mandated by the FCC, and the allocation of the burden of proof specified by the FCC for resolving any disputed facts, would be pointless if the FCC had meant for state commissions simply to *presume* the existence of intense

competition. *See* AT&T-WCOM Exh. 17 (Hirshleifer Reb.) at 5; 12 Tr. 3479 (Vander Weide) (conceding that, under his interpretation of ¶ 702, the parties and the Commission are “wasting our time” by “litigating over what competition Verizon actually faces”).

Verizon’s interpretation is also contradicted by the reference in the first sentence of ¶ 702 to “the risks they *face*.” *Id.* (emphasis added). Verizon’s parsing of the *Local Competition Order* would effectively transform the subject of inquiry into “the risks a firm *would face if the market were assumed to be highly competitive.*” *See also* Tr. 3569:18-3570:6 (Vander Weide).

Confronted with the italicized portion of the first sentence of Paragraph 702 during cross-examination in the New Jersey UNE case, Dr. Vander Weide was unable to reconcile Paragraph 702 with his contorted reading of the *Local Competition Order*:

Q. What is the point of the second half of the sentence if state commissions are obligated to assume in all events that the business is going to be highly competitive?

A. Well, its – I don’t know what – what the purpose is of the last half of the [sentence] is.⁶²

Unsurprisingly, Dr. Vander Weide’s reading of the *Local Competition Order* has been rejected repeatedly in UNE litigation. For example, the United States District Court in Delaware, upholding a 1997 decision of the Delaware PSC specifically rejecting Dr. Vander Weide’s interpretation of the *Order* on behalf of Verizon-Delaware, reasoned as follows:

Bell points to an apparent contradiction in assuming instantly competitive prices for network elements (even though no such competition now exists) but, in the context of determining cost of capital, assuming little competition and, consequently, low costs of capital. . . . The Telecommunications Act attempts to recreate the prices that a hypothetical efficient company would charge for its network elements and services in a competitive market. Indulging

⁶² 2 New Jersey UNE Tr. (11/29/00) at 355-57 (Vander Weide) (reproduced in this docket as AT&T Exh. 110 and discussed at Tr. 3571-74).

in this fiction, however, does not change the fact that ILECs like Bell do not face the same competitive risks as firms operating in a competitive market. Indeed, ILECs have had no competition for decades, and they will face little competition in the market for network elements in the near future. *See Local Competition Order* ¶ 702, at 353. Therefore, in introducing competition in the local telephone market, it makes perfect sense to recreate competitive prices while acknowledging that the current lack of competition warrants reduced costs of capital.

Bell Atlantic-Delaware, Inc. v. McMahon, 80 F.Supp.2d 218 (D. Del. 2000) at 240 n. 19 (citation omitted) (emphasis added).

Verizon, unable to reconcile the legal fiction of a highly risk local telephone market with the unambiguous language of ¶ 702 of the *Local Competition Order*, argues instead that the FCC has repudiated ¶ 702. First, Verizon cites the Commission's recent Section 271 order in Massachusetts.⁶³ The competitive standard recognized in the Massachusetts decision, however, is the standard of ¶ 702 itself. In questioning the cost of capital established by the Massachusetts Department of Telecommunications and Energy, the FCC noted with concern the possibility that "this relatively high cost of capital is sufficiently justified by state-specific factors":

Commenters have raised legitimate concerns regarding some of the inputs used by Massachusetts in calculating its loop rates. In particular, we note that the Massachusetts Department utilized a cost of capital of 12.16 percent. This is higher than the cost of capital that the Massachusetts Department has used in setting Verizon's local rates and substantially higher than the cost of capital employed by any of the other states in Verizon's region. AT&T questions whether there is any reason to believe that offering UNEs on a wholesale basis, where Verizon faces no competition, is riskier than offering retail service, where it now has

⁶³ AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 5-6 (citing VERIZON Exh. 104 (Vander Weide Dir.) at 6).

competition. *We question whether this relatively high cost of capital is sufficiently justified by state-specific factors.*⁶⁴

If the TELRIC standard required adjudicators to assume the existence of intense competition as a matter of law, whether “state-specific factors” demonstrated a high degree of actual competition would be irrelevant. *See* AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 5-6.

Equally meretricious is Verizon’s use of the reply brief filed by the FCC with the United States Supreme Court earlier this year in the Court’s pending review of the *Local Competition Order*.⁶⁵ Seizing upon a single paragraph and footnote from the brief, Verizon witnesses Vander Weide and Shelanski proclaim that the FCC has “repudiated” ¶ 702.⁶⁶ The notion the brief did so, or otherwise adopted a more extravagant cost of capital standard for UNE litigation, turns the brief on its head.

The carryover paragraph on pages 11-12 of the brief makes the unexceptionable point that state commissions may (and, indeed, must) depart from their traditional cost-of-capital determinations “when incumbents show that those determinations do not comply with that standard.” Nothing in the paragraph, or any other part of the brief, suggests that the FCC has abandoned ¶ 702 as the standard governing this inquiry. To the contrary, the FCC, in the cited paragraph, cites ¶ 702 *twice*.

⁶⁴ FCC Memorandum Opinion and Order, *In the Matter of Application of Verizon New England Inc., Bell Atlantic Communications, Inc. (d/b/a Verizon Long Distance), NYNEX Long Distance Company (d/b/a Verizon Enterprise Solutions) And Verizon Global Networks Inc., For Authorization to Provide In-Region, InterLATA Services in Massachusetts*, CC Docket No. 01-9, Adopted and released: April 16, 2001, ¶ 38, at 19-20 (footnotes omitted) (emphasis added).

⁶⁵ Reply Brief of FCC filed July 23, 2001, in *Verizon Comms. Inc. v. FCC*, Nos. 00-511, 2000 U.S. Brief 511.

⁶⁶ Verizon Exh. 112 (Vander Weide Reb.) at 19 (discussing FCC reply brief at 11-12 n. 8); Verizon Exh. 118 (Vander Weide Surreb.) at 14-15 & 22 (same); Verizon Exh. 110 (Shelanski Reb.) at 10 (same).

Footnote 8 to the carryover paragraph is no more helpful to Verizon. When its witnesses quote from the footnote, they invariably provide only the following excerpt: “an appropriate cost of capital determination takes into account not only existing competitive risks . . . but also risks associated with the regulatory regime to which a firm is subject.”⁶⁷ The entire footnote, however, reads as follows:

Moreover, an appropriate cost of capital determination takes into account not only existing competitive risks, as the FCC recently recognized (see Local Competition Order (para. 702), J.A. 395-396), but also risks associated with the regulatory regime to which a firm is subject. *That second consideration is, notwithstanding the incumbents’ contrary suggestion (BellSouth Resp. Br. 30-32), implicit in any determination of the true economic cost of capital.* See generally *Represcribing the Authorized Rate of Return for Interstate Servs. of Local Exch. Carriers*, 5 F.C.C.R. 7007, 7521 (1990) (para. 120) [“1990 Rate Represcription”], *aff’d sub nom. Illinois Bell Tel. Co. v. FCC*, 988 F.2d 1254 (D.C. Cir. 1993).

Reply Brief of FCC, *supra*, at *12 n.8 (emphasis added). The portions omitted by Verizon are telling.

The parenthetical reference to “Local Competition Order (para. 702)” makes clear, once again, that the “existing competitive risks” to be analyzed are the risks of the competition that the incumbent carrier actually expects to face. And the discussion of *regulatory* risk in the balance of the footnote (“risks associated with the regulatory regime to which a firm is subject”) amounts to a clear rejection of the hypothetical risk paradigm that Verizon espouses.

The Commission’s parenthetical reference to “BellSouth Resp. Br. 30-32” alludes, of course, to pages 30-32 of the joint brief that Verizon, BellSouth, SBC and USTA sponsored on June 8, 2001, as respondents in the same Supreme Court case. In that portion of their joint brief, Verizon and its allies argued (just as Verizon argues here) that consistency with

⁶⁷ See previous footnote.

the TELRIC standard requires regulatory commissions to “determine the cost of capital and depreciation expenses” by assuming that the supplier of UNEs would face the competitive risks of a “hypothetical” “perfectly competitive” or “hypercompetitive” market, rather than the competitive risks resulting from “actual market conditions.” WCOM Exh. 101 (Responsive Brief of BellSouth *et al.* filed June 8, 2001, in *Verizon Comms. Inc. v. FCC*, Nos. 00-511, at 30-33). Verizon *et al.* also criticized the FCC for supposedly requiring state commissions to retain in UNE pricing decisions the depreciation schedules and cost of capital determinations that were set under prior historical-cost ratemaking regimes. *Id.*

Footnote 8, far from embracing the ILECs’ fictional risk paradigm or the premium returns it supposedly warrants, makes clear that the appropriate regulatory risk premium to be included in the cost of capital in UNE rate cases will normally be zero. The second sentence of the footnote—the one that Verizon never quotes—drives the point home. Compensation for the “risks associated with the regulatory regime to which a firm is subject” is “implicit in *any* determination of the true economic cost of capital”—“*notwithstanding the incumbents’ contrary suggestion.*” FCC Reply Br. at 12 n. 8 (emphasis added).

The final nail in the coffin is the FCC’s citation at the end of footnote 8 to the *1990 Rate Represcription* proceeding. *Id.* In the 1990 proceeding, the FCC specifically rejected the incumbent LECs’ arguments for an additive to the cost of capital (rate of return) to compensate for the risk that the FCC (or any other regulatory agency) might exclude prudent investments from a carrier’s rate base. In declining to approve any such adjustment, the FCC explained:

Nothing in the Constitution or in the Communications Act requires the agency to adjust the prescribed rate of return to take into account *the agency’s policies regarding rate base disallowances*. Rather, the methodologies we employ to determine the appropriate rate of return already take into account *the FCC’s approach to such disallowances*. Investors are presumably aware of our

ratemaking procedures, including our treatment of plant that is not automatically included in the rate base, and take these procedures into account in establishing the price of the stock. *The risk of disallowance, including the disallowance of prudent investment, is one of many factors that investors consider in evaluating the riskiness of investment in a regulated enterprise. Thus, the rate of return prescription itself already takes into account the fact that the FCC generally disallows prudent investments that are not “used and useful” in providing service.*

1990 Rate Represcription, 5 FCC Rcd. at 7521 (¶ 120) (emphasis added). The U.S. Court of Appeals for the D.C. Circuit, affirming the FCC, recognized that the FCC had held only “that because investors are aware of its rate base policies, the agency’s market-based methodologies for determining the rate of return will produce a rate high enough to compensate for that risk.” *Illinois Bell Tel. Co. v. FCC*, *supra*, 988 F.2d at 1263.

The FCC’s logic applies with equal force here. The FCC and state commissions have been setting UNE prices under the rubric of the *Local Competition Order*—and, in general, rejecting the inflated cost of capital measures proposed by Dr. Vander Weide—for nearly six years. The nature of these standards has been no secret to the industry and its investors. *See* 12 Tr. 3625-26 (state commissions have been sending “price signals” to potential entrants by setting purportedly TELRIC-compliant prices for UNEs since 1996). Whatever regulatory risks the FCC standards may create should be fully reflected in the returns demanded by investors, and no return additive for regulatory risk is warranted.

In this regard, Dr. Vander Weide’s (and Verizon’s) current interpretation of the *Local Competition Order* is starkly at odds with Verizon’s characterization of the *Order* in the same Supreme Court proceedings earlier this year. The TELRIC standard, *Verizon et al.* informed the Court, “presumes that carriers in its fictional world of constant network replacement *would nonetheless continue to have the same cost of capital established for incumbents in the stable, low-risk monopoly system of the past.*” Brief of Petitioners Verizon

Communications Inc. *et al.* in *Verizon Communications Inc. v. FCC*, No. 00-511 (U.S. Apr. 9, 2001) at 10 (citing *Local Competition Order* ¶¶ 687-688, 702) (emphasis added). To overcome this presumption, Verizon adds, “incumbents” must “demonstrate with specificity that the business risks—defined exclusively in terms of facilities-based entry by competitors—justify any change in the rate of return.” *Id.*

Verizon’s current parsing of the *Order* is also contradicted by a recent report by National Economic Research Associates (“NERA”), the consulting firm that employs Verizon witnesses William Taylor and Timothy Tardiff. The NERA report states in part:

In terms of the more general concept of incremental costs, TELRIC maintains the following specific assumptions.

First, the business decision being modeled is that of a hypothetical local exchange carrier that offers unbundled elements to retail providers (possibly itself) at undifferentiated prices. Hence the increments in question are the total volume for the elements demanded by the retail providers.

Second, the time horizon over which the ILEC offers the wholesale elements is assumed to be the longest of the long-run. Implicit in this definition are the assumptions that (1) the ILEC will effectively be a monopolist in the provision of network elements for the indefinite future and (2) competitors will need to obtain such elements to compete over this time frame.⁶⁸

In fact, there is no legal inconsistency seeking to replicate the *costs* of an effectively competitive (or contestable) market while limiting *returns* to the levels needed to compensate the regulated firm for the risk it actually faces. In setting the cost of capital in this

⁶⁸ See AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 22 (quoting from “An Economic Evaluation of Network Cost Models”, NERA, August 7, 2000, Exhibit 408, State of New York Public Service Commission, *Proceeding on Motion of the Commission to Examine New York Telephone Company’s Rates for Unbundled Network Elements*, Case 98-C-1357) (emphasis added).

proceeding, the Commission must adhere to the legal standard under which the return on invested capital corresponds to the risks associated with the business enterprise actually being undertaken. This standard is well-stated in the United States Supreme Court's decision in *Bluefield Water Works Improvement Co. v. PSC*, 262 U.S. 679 (1923), as follows:

A public utility is entitled to such rates as will permit it to earn a return . . . equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties; but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures.

Id. at 692-93. The Court reiterated the applicable standard in *FPC v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944), holding that “[t]he return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks.” Hence, the level of costs that the TELRIC standard seeks to model is entirely distinct from the level of competitive risk that a TELRIC-regulated local monopoly like Verizon can expect to face. A regulator can set prices for a firm with monopoly power that replicate the costs and efficiencies of a firm in a competitive market without pretending that the monopolist will thereby face the risks and uncertainties of a competitive firm. AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 21-22.

Even Verizon witness Dr. William Taylor has acknowledged this distinction. Testifying in the UNE proceeding in Virginia in 1997, Dr. Taylor dismissed the notion that forward-looking pricing methodologies require a departure from the traditional approach of determining the cost of capital in light of the *actual* competitive risks of the regulated enterprise. Dr. Taylor agreed that “it is not unheard of for regulators to set prices in noncompetitive markets that replicate the prices that would result from a competitive market.” Moreover, he conceded, “it is possible for a regulatory standard which sets rates at competitive levels to coexist with an

environment in which *the regulated firm faces less competitive risks than a competitive firm would face. . .*”⁶⁹

In any event, it is by no means clear that the assumption of a competitive market, even if required for consistency with the TELRIC standard, would entitle Verizon to a higher cost of capital than warranted by the competition that Verizon actually expects to face. Because no local telephone market is perfectly competitive or contestable, there are obviously no data points from which one could observe the returns demanded by investors in firms that participate in such markets. 12 Tr. 3627 (Hirshleifer).

In principle, however, the competitive risk faced by participants in the ideally competitive market whose performance the TELRIC standard seeks to mimic should be *lower*, not higher, than the risk that Verizon actually faces going forward. A market in which entry and exit are instantaneous, costless, frictionless, and without sunk costs is what economists call a perfectly contestable market.⁷⁰ In such a market, a firm that lost some or all of its customers to a new entrant could simply liquidate its investment and immediately exit the market. The risk that

⁶⁹ AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at p. 58 (quoting *Ex Parte to Determine Prices Bell Atlantic—Virginia, Inc. Is Authorized to Charge Competing Local Exchange Carriers in Accordance with the Telecommunications Act of 1996 and Applicable State Law, Virginia State Corporation Commission*, Case No. PUC970005, 2 Tr. (11/29/00) 580-81 (Taylor)).

⁷⁰ Tr. 3624-27 (Hirshleifer); accord, *Coal Rate Guidelines—Nationwide*, 1 I.C.C.2d 520, 528-29 (1983), *aff’d Consolidated Rail Corp. v. United States*, 812 F.2d 1444 (3rd Cir. 1987). “The notion of contestable markets offers a generalization of the notion of purely competitive markets, a generalization in which fewer assumptions need to be made to obtain the usual efficiency results. Using contestability theory, economists no longer need to assume that efficient outcomes occur only when there are large numbers of actively producing firms . . . *What drives contestability theory is the possibility of costlessly reversible entry.*” William J. Baumol, John C. Panzar and Robert D. Willig, *Contestable Markets And the Theory of Industry Structure* xiii (rev. ed. 1988) (emphasis added).

competition could strand some or all of the incumbent firm's sunk investment—i.e., the biggest business risk that actual firms face in actual markets—would be absent. *Id.*

In light of the above considerations, regulatory bodies that have adopted rate standards designed to replicate the performance of perfectly competitive or contestable markets (e.g., TELRIC and stand-alone cost (“SAC”)) have *not* adopted the extravagant risk model that Verizon proposes. Instead, those regulators have chosen to use cost of capital measures that reflect the forward-looking risks *actually* faced by the incumbent regulated monopolies.⁷¹

It is striking that Dr. Vander Weide, when asked to specify the level of competition dictated by consistency with the TELRIC standard, waffled. Tr. 3556-57. It could be anywhere on the continuum from atomistic competition to a duopoly, he added. *Id.* at 3554-56.

b. The Risk Actually Faced By Verizon In Supplying Unes In Virginia Is Likely To Remain Low For The Foreseeable Future.

Verizon's alternative claim that its business risk in supplying UNEs in Virginia will in fact be high is also unsupported. AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 19-20, 25. First, the relevant risks are those of Verizon's wholesale business, not its retail local business.

⁷¹ See *Coal Rate Guidelines*, *supra*, 1 I.C.C.2d at 534-37 (implementing stand-alone cost test with cost of capital based on DCF or CAPM analyses of risks and capital costs of incumbent railroad carriers). In this regard, Verizon's reliance on the testimony and published attacks on the TELRIC standard by NERA economists such as Alfred Kahn, William Taylor and Timothy Tardiff is truly ironic. Throughout the 1980s and early 1990s, Dr. Kahn and other NERA economists were avid proponents of the stand-alone cost test as a constraint on the freight transportation rates charged by market-dominant railroads and energy pipelines. See 1 Kahn, *The Economics of Regulation* (1988 reprint) at xix-xx & nn. 7-8; A. Kahn, “Market Power Issues in Deregulated Industries,” 60 *Antitrust L.J.* 857, 859-60 (1992). At no time did Dr. Kahn or his colleagues at NERA suggest that consistency with the instantaneous entry assumptions underlying the stand-alone cost test required a risk premium over the cost of capital determined by reference to the risks actually facing the incumbent regulated carriers.

Indeed, in *Bell Atlantic-Delaware, Inc. v. McMahon*, 80 F.Supp.2d 218, 240-241 (D.Del. 2000), the court upheld the decision of the Delaware PSC to reject Dr. Vander Weide's cost of capital analysis in part because of his failure to distinguish between wholesale and retail risk:

In assessing Bell's case for an elevated cost of equity, the Hearing Examiners criticized the testimony of Bell's expert, Dr. James Vander Weide. The Examiners noted that Vander Weide based his cost of equity on the risk associated with Bell's retail business instead of on the future demand for Bell's network elements that it will sell at *wholesale*. AT&T's expert, Bradford Cornell, also criticized Vander Weide's analysis as "ignor[ing] the critical fact that the business at hand in this proceeding is *not* local retail phone service that already exists, but rather the new business of leasing of network elements at *wholesale* for use in providing competitive phone services to an existing *retail* market." [citation omitted] The distinction between wholesale and retail is crucial.

Retail competition is competition for the end user of telephone service. That sort of competition is not at issue when determining the risks associated with leasing unbundled network elements (*e.g.*, loops and switches) at wholesale. The risks associated with leasing "bottleneck" network elements at wholesale is less than that associated with competition for retail service. *See Local Competition Order* ¶ 702, at 353 (noting that network elements "generally are bottleneck, monopoly services that do not now face significant competition"). This is so because Bell often is the only provider of these network elements, and it is to Bell that new entrants must come to lease or purchase loops, switches, and other network elements. Thus, even if retail competition intensifies, Bell's prominence as a wholesale provider of network elements will remain largely unaffected—at least until new entrants build their own networks. [footnote omitted] Accordingly, the Hearing Examiners correctly rejected Vander Weide's testimony as impermissibly attributing the risks of retail competition to the competition in the sale of unbundled network elements. *See Local Competition Order* ¶ 691, at 348 (explaining that, "[o]nly those costs that are incurred in the provision of network elements in the long run shall be directly attributable to those elements").

In apparent response to criticisms of this kind, Dr. Vander Weide now advances the astonishing claim that the wholesale supply of UNEs is *riskier* than the downstream retail

business or the other businesses of telephone holding companies.⁷² These arguments are frivolous.

The diversification of Verizon's parent company into wireless, internet and foreign services cannot possibly make the company less risky than a wholesale supplier of UNEs, however. The acquisition of systematically riskier businesses, which these are, can *never* reduce the overall risk of the aggregate enterprise.⁷³

Likewise, Verizon's universal service obligations are irrelevant as a risk factor. The FCC and state commissions have developed, or are in the process of developing, explicit funding mechanisms to compensate carriers for the costs of their universal service obligations. In any event, universal service costs are not properly included in UNE prices. AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 27-28.

Nor is any return premium warranted for "regulatory risk." The risk that Verizon invokes is that risk that the Commission will err by setting UNE prices below cost. But the Act requires that UNE prices cover forward-looking economic costs, and it is presumptuous for Verizon to assume that the Commission and the reviewing courts will abdicate their responsibilities under this section. *See id.* at 28-29.

The notion that the "operating leverage" makes Verizon's wholesale business risky is absurd: Verizon's wholesale business of supplying UNEs is a cash cow that requires no significant incremental capital investment.⁷⁴

Hence, the relevant factual issue remains what it was in the 1996-97 UNE litigation: how likely is facilities-based entry, the only form of competition that could, even in

⁷² VERIZON Exh. 112 (Vander Weide Reb.) at 36-37.

⁷³ AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 31-32; AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 28 (citing Commission).

⁷⁴ AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 29-30.

theory, threaten Verizon's wholesale business? The record in this proceeding makes clear that significant facilities-based entry is unlikely in the foreseeable future. As in the past, as in the past, network elements are likely to remain "bottleneck, monopoly services" without "significant competition."⁷⁵

The reality is that effective facilities-based competition for Verizon's wholesale services is as remote as it was five years ago, when Congress enacted the Telecommunications Act of 1996. The share of local lines served by CLECs has stalled in the single digits, and most of this competitive "diversion" has occurred through resale or the purchase of UNEs (neither of which displaces the incumbent as the wholesale supplier of UNEs), not facilities-based entry. Annualized wholesale line losses to the CLECs dropped to 2.2 percent in the first quarter of 2001, down from 2.8 percent in the second quarter of 2000.⁷⁶ Today, the competitive LEC industry now stands on the verge of collapse. Its outside funding has dried up, and its financial wreckage litters the bankruptcy dockets.⁷⁷ The incumbent LECs, "with their seemingly impenetrable local-service fortresses, are emerging as the hands-down winners."⁷⁸ Barriers to entry remain "great," for new entrants "have to either gain access to last-mile end-customer line

⁷⁵ *Local Competition Order*, ¶ 702; AT&T-WCOM Exh. 5 (Hirshleifer Dir.) at 42-43; AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 20-21.

⁷⁶ AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 26-27; Jonathan R. Laing, "The Bell's Toll: New aggressiveness and a friendly deregulatory environment bode well for the Baby Bells," *Barron's* (June 4, 2001) at 19-20.

⁷⁷ AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 17-31; AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 24-35; AT&T-WCOM Exh. 20 (Murray Surreb.) at 13-17. *Value Line*, an investment handbook repeatedly cited by Dr. Vander Weide, has likewise noted that start-up CLECs "are in financial trouble, with the capital markets having dried up over the past 12 months." *Value Line Investment Survey* 720 (Oct. 5, 2001) (AT&T Exh. 108).

⁷⁸ R. Farzad, *Has the Telecom War Been Won?* Dow Jones News Service, May 15, 2001; S. Schiesel, *Sitting Pretty: How Baby Bells May Conquer Their World*, N.Y. Times, Apr. 22, 2001, at Money & Business 1.

connections owned by the RBOCs or build asset-based systems at a considerable cost.”⁷⁹ While an eventual turnaround is a theoretical possibility, the CLEC sector is unlikely ever to make sufficient inroads to prevent continued growth in the ILEC customer base. AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 27.

Significantly, even Dr. Vander Weide agreed on cross-examination that the facilities-based CLEC sector is unlikely to make significant competitive inroads into Verizon’s business in Virginia for the foreseeable future. Tr. 352-28, 3545-47 (Vander Weide) Although he understandably chose to attribute the problem to UNE pricing standards rather than the entry barriers enjoyed by Verizon and its peers, he agreed that “the competitive threat posed by facilities-based entry is likely to be modest” unless the current regulatory environment changes greatly. Tr. 3526.

Nor does Verizon’s own management view CLEC entry as a grave competitive threat. See AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 21-23. Indeed, the company has explained that “virtually all the competition in the local consumer marketplace travels over our networks today . . . our wholesale business will grow this year at close to double digit rates, and even lost market share translates into more traffic for our network.” Bell Atlantic Investor Quarterly 4Q 1999, January 24, 2000 at 17.

The Form 10-K Annual Report of Verizon Communications Inc. for the calendar year 2000, filed only seven months ago, offers an equally glowing portrayal of Verizon’s local business:

Growth in local service revenues of \$768 million, or 3.7% in 2000 and \$640 million, or 3.2% in 1999 was driven by higher usage of our network facilities. This growth, generated in part by an increase in access lines in service in each year, reflects strong customer demand and usage of our data transport and digital services.

⁷⁹ *Value Line*, *supra*, at 720.

* * *

Our network access revenues grew \$315 million, or 2.5% in 2000 and \$393 million, or 3.2%, in 1999. This growth was mainly attributable to higher customer demand, primarily for special access services that grew approximately 36% in both 2000 and 1999. This volume growth reflects a continuing expansion of the business market, particularly for high-capacity, high-speed digital services. Growth in access minutes of use and higher revenues received from customers for the recovery of local number portability also contributed to network access revenue growth in both years.

Verizon Form 10-K for 2000 at F-8 and F-9. In short, the prospect that facilities-based local competition will someday pose a significant threat to Verizon's business of supplying UNEs at wholesale remains as far-fetched as ever.

5. The Telecom Holding Companies Used By Mr. Hirshleifer Are A Better DCF Comparison Group Than The Diversified Industrial Companies Used By Dr. Vander Weide.

A valid DCF equity analysis requires the use of a comparison group consisting of other companies that are comparable in business risk to the company being analyzed.⁸⁰ Because no wholesale suppliers of UNEs are publicly traded as stand-alone companies, AT&T witness Hirshleifer used a proxy group of four large telecommunications holding companies ("THCs") whose operations consist primarily of the local telecommunications business.⁸¹

Dr. Vander Weide, while conceding that the cost of equity capital is largely a function of risk, performed his primary DCF analysis on a subset of approximately 110 firms selected from the 400 firms in the S&P Industrial list. This group includes such diverse firms as automobile manufacturers, oil companies, producers of food and food ingredients, publishing

⁸⁰ AT&T-WCOM Exh. 5 (Hirshleifer Dir.) at 17-18; AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 17-18.

⁸¹ AT&T-WCOM Exh. 5 (Hirshleifer Dir.) at 4, 7, 18-19 & Att. JH-2.